

ABSTRACT OF THE DISCLOSURE

A system and method adaptively control sensitivity, on a pixel-by-pixel basis, of a digital imager. An illumination intensity level mapping controller determines a number of pixels of image data having illumination intensity levels within a first defined range of illumination intensity levels and determines an illumination intensity level mapping function based upon the determined number of pixels within the first defined range of illumination intensity levels. An exposure controller determines a number of pixels having illumination intensity levels within a second defined range of illumination intensity levels and determines an integration time based upon the determined number of pixels having illumination intensity levels within the second defined range of illumination intensity levels. A transfer control function generation circuit determines a composite transfer control function based on the determined integration time and determined illumination intensity level mapping function; determines each transition point between a plurality of discrete transfer control functions from the determined integration time and the determined illumination intensity level mapping function; and imposes the determined transfer control function upon a pixel of the digital imager.